

Los Alamos

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Potter

memorandum

TO: Distribution
FROM: *Don S. Dreesen*
Don S. Dreesen
SYMBOL: ESS-4-84-355
SUBJECT: EXPERIMENT 2049 - DATA PACKAGE AND
PRELIMINARY INTERPRETATION

DATE: September 24, 1984

MAIL STOP/TELEPHONE: J981/7-4318

Experimental Procedure

A 2-1/8 inch OD x 16 foot long (slimhole) temperature collar locator tool with the temperature probe on bottom and the collar locator 1-1/2 foot above the probe was run down the 5-1/2 inch tubing in EE-2. Temperature and casing collars were recorded. Turnaround measurements were made (shown in Table I) and no excessive cable drag was observed.

The OTIS stinger was easily observed on the collar locator plot at 11,290 - 11,348 feet. Because the OTIS packer was set at 11,348 feet (ESS-6 wireline depth) there was concern that the stinger was sitting on top of the packer. After several test runs of the sonde out the bottom of the stinger keeping the cable head in the stinger, it was concluded that the packer was not below the stinger. The tool was parked at 11,250 feet and water was pumped down the 5-1/2 inch tubing at 70 gpm. After 12 minutes the tool was lowered into the 9-5/8 inch casing below the OTIS stinger. Turnaround did not increase in the casing but the casing collars were off depth.

A field correlation was made using the smallest correction (-13 feet). Based on this correlation it appeared that the OTIS stinger was approximately 50 feet higher than it was originally landed and the packer was not where it had been set at 11,348 feet on the 11/27/83 log. The maximum depth logged was 11,593 feet which was about 10 feet above the shoe base on the field correlation.

A temperature log was made from 11,593 feet to the surface with 70 gpm flow down the 5-1/2 inch tubing (see temperature logs). Casing collars were recorded up to the top of the OTIS stinger. There was no difficulty pulling into the stinger (no indication on the wireline weight record).

Best Correlation

The field correlation was not real good. A 46 foot joint was observed where a 38 foot joint should have been. The time drive collar logs were plotted on a commercial 20 foot per inch scale tracing paper. A better correlation was made using a +32 foot correlation to the 11/27/83 log (considering that the 11/27/83 log was zeroed on the rig floor and the 9/28/84 log was zeroed on the master valve, the correction was about +16 feet with an additional + 16 feet for the different zero). This correlation did not appear to be very good during the operation but the tracing paper shows it to be much better (see attached plot).

Conclusions Based on Best Correlation

1. The OTIS stinger is approximately 12 feet above its original landed position.
2. The OTIS packer is not in its original set depth.
3. The OTIS packer is very likely 140 feet below the stinger on the obstruction observed at 11,527 (ESS-6 log 11/27/83 depth during 9-5/8 inch casing scraper run.
4. The sonde set down in the open hole about 23 feet below the 9-5/8 inch shoe.

Other Observations

1. A 16°C cooldown occurred with the 70 gpm injection. Comparing depth of the stinger and 9-5/8 inch casing collars early in the cooldown with depths of the stinger and casing collars on the last run up the hole a 1.5 foot movement of the stinger (shortening of the 5-1/2 inch tubing) is observed. This may indicate the bottom 7500 feet of the 5-1/2 inch tubing is free.
2. The temperature log shows no evidence of fluid turnaround at 10,900 feet, at the bottom of the OTIS stinger or at the bottom of the 9-5/8 inch casing.
3. Fluid circulation up to Madera at 2,200 feet is also indicated on the temperature log.

A more thorough analysis of the temperature log will be made by Zora Dash and George Zyvoloski.

DD/jb

TABLE I
Turnaround Measurements

<u>Depth of Measurement</u>	<u>Location</u>	<u>ΔL (ft)</u>	<u>ΔF (lb_f)</u>
4,000	5-1/2 in. tubing	0	75
6,039	"	1	135
8,000	"	1	150
10,000	"	2	400
10,800	"	3	350
11,000	"	3	
11,100		3	550
11,200		3	550
11,300	OTIS Stinger	4	600
11,320	" "	4	550
11,348	" "	3-1/2	600
11,352	9-5/8 in. Casing	4	600
11,425	" "	3-1/2	650
11,500	" "	3-1/2	700
11,600	" "	3	625

TABLE II

Depth of OTIS Stinger Relative To 9-5/8 Inch Casing

<u>Depths on 1st Run Out</u> (Before Cooldown)		<u>ΔL</u>	<u>Depths on Last Run Out</u> (Full Cooldown)
Top of Stinger	11,294	4	11,290
Stinger Sections	11,296	4	11,292
	11,305	3	11,302
	11,315	3	11,312
	11,325	4	11,321
	11,335	3	11,332
	11,338	3	11,335
Bottom of Stinger	11,346	3	11,343
(Early in Cooldown)			(Full Cooldown)
	11,382	3	11,383
Casing Collar	11,400	2	11,398
	11,417	2	11,415
	11,441	2	11,439
Casing Collar	11,444	1	11,443
	11,483	2	11,481
OTIS Packer?	11,485	2	11,483
	11,494	2	11,492

Best
Correlation

OWP

9 5/8" CBL 4/24/82

ZERO'D ON RIG FLOOR

11400

9 5/8" CC

9 5/8" CC

9 5/8" Float Collar

38'

HT Collar

44'

Casing Shoe

11,600'

ZERO'D ON RIG FLOOR

11400

11500

11600-

ESS-6 CCL
11/27/83

Bottom of stinger is at 11,343'

Stinger was originally landed at 11,386' on the 11/27/83 log

Top of O.H. Packer as originally set 11,348'

ESS-6 CCL
9/18/84

ZERO'D ON MASTER VALUE

no indication of packer at depth originally set.

11400

11500

collar is covered by pk.

packer is 9.75' long

9 5/8" Casing Scraper hit obstruction at 11477 DP depth or 11527 wireline depth

650' correction need for this log to tie in to Drill pipe depths

This may be the packer

46'

Casing Shoe?

Field Correlation

DWP
9 5/8" CBL 4/24/82

9 5/8" cc

9 5/8" cc

9 5/8" Float Collar

38'

HT Collar

44'

Casing Shoe

ESS-6 CCL
11/27/83

Packer
set
at 11346'

Bottom
string
ESS-6 CCL
9/18/84

11400

11400

11400

11500

11500

11500

11530

Bottom of
logged
interval
11530'

96'

11500

TEMP LOG (Below 10,000')

TEMPERATURE (Deg C)

250

225

200

1000

10500

11000

11500

DEPTH (Ft)

Run hole with temp sonde

Look for
packers below
stringer

Start injecting
water at 70 GPM



EE-2 TEMP. SURVEY: EXP. 2049 84/09/18

